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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,238	11/12/2003	Dae-Jong Jang	1793.1060	3540

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EXAMINER

KAYRISH, MATTHEW

ART UNIT	PAPER NUMBER
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2653

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/705,238	Applicant(s) JANG ET AL.	
	Examiner Matthew G. Kayrish	Art Unit 2653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-72 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-72 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/12/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 thru 3, 6, 7, 13 thru 16, 46 thru 48, 52 and 53 are rejected under 35 U.S.C. 102(b) as being unpatentable over Izuka (U.S. Patent number 5555228).
3. Regarding claims 1 and 46, Izuka et al disclose:

A magnetic circuit, comprising:

A magnet including first (247a), second (247b), third (247c) and fourth (247d) magnet parts, the first and second magnet parts disposed adjacent to each other and having opposite polarizations (figure 32), the third and fourth magnet parts respectively neighboring the first and second magnet parts such that at least two sides thereof are enclosed by the first and second magnet parts (figure 32), and having opposite polarizations to the first and second magnet parts (figure 32), respectively;

A tracking coil interacting with the first and second magnet parts (figure 32, item 34/56) generating a driving force in a tracking direction (column 21, lines 43-44); and

A first focusing/tilting coil interacting with the first and third magnet parts (figure 32, item 57) and a second focusing/tilting coil interacting with the second

and fourth magnet parts (figure 32, item 58), generating a driving force in at least one of a focusing direction and a tilting direction including the focusing direction (column 22, lines 27-30).

4. Regarding claim 2, Izuka et al disclose:

The magnetic circuit according to claim 1 (see claim 1), wherein the first and second magnet parts are substantially \neg -shaped (figure 32) and symmetric (figure 32, odd symmetry).

5. Regarding claim 3, Izuka et al disclose:

The magnetic circuit according to claim 2 (see claim 2), wherein the first and second magnet parts are substantially \neg -shaped and symmetric so that the magnetic circuit is used when a driving center is required to be positioned upward (figure 32).

6. Regarding claims 6 and 48, Izuka et al disclose:

The magnetic circuit according to claim 1 (see claim 1), wherein the first and second magnet parts are substantially L-shaped (figure 32) and symmetric (figure 32, odd symmetry).

7. Regarding claim 7, Izuka et al disclose:

The magnetic circuit according to claim 6 (see claim 6), wherein the first and second magnet parts are substantially L-shaped and symmetric so that the magnetic circuit is used when a driving center is required to be positioned upward (figure 32).

8. Regarding claim 13, Izuka et al disclose:

The magnetic circuit according to claim 1, wherein the magnet includes a 4-polarization surface-polarized magnet or a pair of 2-polarization surface-polarized magnets (figure 32, 2 pair of oppositely polarized magnets).

9. Regarding claim 14, Izuka et al disclose:

The magnetic circuit according to claim 1, wherein the magnetic circuit is selectively used for biaxial (items 56, 57 and 58, tracking and focusing coils), triaxial, or quadriaxial movements (tracking and focus).

10. Regarding claims 15 and 52, Izuka et al disclose:

The magnetic circuit according to claim 14, wherein the magnetic circuit is selectively used for biaxial, triaxial, or quadriaxial movements by controlling direction of current applied to the first and second focusing/tilting coils (column 22, lines 36-59).

11. Regarding claims 16 and 53, Izuka et al disclose:

The magnetic circuit according to claim 1, wherein at least one of the first and second focusing/tilting coils and the tracking coil is a fine pattern coil (column 12, lines 30-40).

12. Regarding claim 47 Izuka et al disclose:

The magnetic circuit according to claim 46 (see claim 46), wherein the tracking coil generates a driving force in a tracking direction (column 22, lines 20-27), the first and second focusing/tilting coils generate a driving force in at least one of a focusing direction and a tilting direction including the focusing direction (column 22, lines 27-30).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 4, 5, 8 thru 12 and 49 thru 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izuka, in view of Lee (US Patent number 6857127).

15. Regarding claims 4, 8, 10 and 49, Izuka et al disclose the magnetic circuit according to claim 2. Izuka fails to specifically disclose:

Wherein a position of a neutral zone between the first and third magnet parts and a position of a neutral zone between the second and fourth magnet parts, along the focusing direction, are changeable.

Lee et al disclose:

Wherein a position of a neutral zone between the first and third magnet parts (figure 3, item G) and a position of a neutral zone between the second and fourth magnet parts (figure 3, item G), along the focusing direction, are changeable (column 1, lines 64-67 and column 2, lines 1-5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to place changeable gaps between Izuka's magnets for the purpose of effecting the strength of the magnetic force in the tracking and focus directions.

16. Regarding claims 5, 9, 11 and 50, Izuka et al disclose the magnetic circuit of claim 4.

Izuka fails to specifically disclose:

Wherein the position of the neutral zone between the first and third magnet parts and the position of the neutral zone between the second and fourth magnet parts along the focusing direction are changeable in order to optimize a tracking sensitivity.

Lee et al disclose:

Wherein the position of the neutral zone between the first and third magnet parts and the position of the neutral zone between the second and fourth magnet parts along the focusing direction are changeable (See claim 4) in order to optimize a tracking sensitivity (column 4, lines 7-21).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to place changeable gaps between Izuka's magnets for the purpose of effecting the sensitivity of the magnetic force in the tracking and focus directions.

17. Regarding claims 12 and 51, Izuka et al disclose:

The magnetic circuit according to claim 1, wherein the magnet includes a 4-polarization surface-polarized magnet or a pair of 2-polarization surface-polarized magnets (figure 32, 2 pair of oppositely polarized magnets).

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18. Claims 17 thru 19, 22, 23, 29 thru 39, 42 thru 45, 54 thru 56, 59 thru 68 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Izuka, in view of Suzuki (US Patent number 6741543).

19. Regarding claims 17, 35, 54, 66 and 67, Izuka et al disclose:

Everything that is restated from claim 1 (see claim 1); further disclosing:

An objective lens focusing light emitted from a light source (Abstract); (From claim 66)

An optical pickup actuator performing biaxial (items 56, 57 and 58, tracking and focusing coils), triaxial, or quadriaxial movements (tracking and focus) by controlling direction of current applied to the first and second focusing/tilting coils (column 22, lines 36-59). (From claim 66)

Izuka fails to specifically disclose:

An optical recording and/or reproducing apparatus for a disc, comprising:

An optical pickup, comprising:

An optical pickup actuator driving an objective lens movably installed along a radial direction of the disc to record information on the disc and/or reproduce information recorded on the disc;

A focusing servo and a tracking servo; and

A controlling unit controlling the focusing servo and the tracking servo

Wherein the optical pickup actuator includes:

An optical pickup actuator for an objective lens, comprising:

A base;

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A bobbin holding the objective lens;

A support fixed at one end to a holder placed on a side of the base and fixed at the other end to a side surface of the bobbin, and movably supporting the bobbin; and

A pair of magnetic circuits, each of the pair positioned on a different side surface of the bobbin and oppose each other;

Suzuki et al disclose:

An optical recording and/or reproducing apparatus for a disc (column 1, lines 6-10), comprising:

An optical pickup (column 1, lines 6-10), comprising:

An optical pickup actuator driving an objective lens movably installed along a radial direction of the disc (column 1, lines 13-20) to record information on the disc and/or reproduce information recorded on the disc (column 1, lines 6-10);

A focusing servo (column 1, lines 24) and a tracking servo (column 1, lines 24); and

A controlling unit controlling the focusing servo and the tracking servo (column 1, lines 65-67 and column 2, lines 1-16), wherein the optical pickup actuator includes:

An optical pickup actuator for an objective lens (Abstract), comprising:

A base (10);


A bobbin holding the objective lens (column 1, lines 24-25);

A support fixed at one end to a holder placed on a side of the base (figure 2, item 22a) and fixed at the other end to a side surface of the bobbin (figure 2, 22b), and movably supporting the bobbin (column 7, lines 22-24); and


A pair of magnetic circuits (items 12 & 90, items 11 & 80), each of the pair positioned on a different side surface of the bobbin (figure 2) and oppose each other (column 7, lines 52-55).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to place Izuka's optical head in Suzuki's actuator for the purpose of movability and support.

20. Regarding claims 18 and 36, Izuka et al disclose:

The magnetic circuit according to claim 1 (see claim 1), wherein the first and second magnet parts are substantially -shaped (figure 32) and symmetric (figure 32, odd symmetry).

21. Regarding claims 19 and 37, Izuka et al disclose:

The magnetic circuit according to claim 2 (see claim 2), wherein the first and second magnet parts are substantially -shaped and symmetric so that the magnetic circuit is used when a driving center is required to be positioned upward (figure 32).

22. Regarding claims 22, 38, 56 and 69, Izuka et al disclose:

The magnetic circuit according to claim 1 (see claim 1), wherein the first and second magnet parts are substantially L-shaped (figure 32) and symmetric (figure 32, odd symmetry).

23. Regarding claims 23 and 39, Izuka et al disclose:

The magnetic circuit according to claim 6 (see claim 6), wherein the first and second magnet parts are substantially L-shaped and symmetric so that the magnetic circuit is used when a driving center is required to be positioned upward (figure 32).

24. Regarding claims 29, 42, 59 and 72, Izuka et al disclose:

The magnetic circuit according to claim 1, wherein the magnet includes a 4-polarization surface-polarized magnet or a pair of 2-polarization surface-polarized magnets (figure 32, 2 pair of oppositely polarized magnets).

25. Regarding claims 30, 43, Izuka et al disclose:

The magnetic circuit according to claim 1, wherein the magnetic circuit is selectively used for biaxial (items 56, 57 and 58, tracking and focusing coils), triaxial, or quadriaxial movements (tracking and focus).

26. Regarding claims 31, 44 and 60, Izuka et al disclose:

The magnetic circuit according to claim 14, wherein the magnetic circuit is selectively used for biaxial, triaxial, or quadriaxial movements by controlling direction of current applied to the first and second focusing/tilting coils (column 22, lines 36-59).

27. Regarding claims 32, 45 and 61, Izuka et al disclose:

The magnetic circuit according to claim 1, wherein at least one of the first and second focusing/tilting coils and the tracking coil is a fine pattern coil (column 12, lines 30-40).

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28. Regarding claim 33, Izuka et al disclose the optical pickup actuator according to claim 17.

Izuka fails to specifically disclose:

Wherein the end of the support fixed to the side surface that is different from the side surfaces on which the magnetic circuits are positioned.

Suzuki et al disclose:

Wherein the end of the support fixed to the side surface that is different from the side surfaces on which the magnetic circuits are positioned (figure 2, items 21, 22b, 11 & 80 and 12 & 90).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to hold Izuka's bobbin in Suzuki's manner to prevent interference among the supports and magnetic circuits.

29. Regarding claim 34, Izuka et al disclose the optical pickup actuator according to claim 17.

Izuka fails to specifically disclose:

Wherein either one of the first and second focusing/tilting coils and the tracking coil or the magnet is positioned on the side surface of the bobbin, and the other one is installed on the base.

Suzuki et al disclose:

Wherein either one of the first and second focusing/tilting coils and the tracking coil or the magnet is positioned on the side surface of the bobbin (figure

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2, item 30 & 90), and the other one is installed on the base (figure 2, item 12, 13 & 20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to separate Izuka's coils and magnets between the base and bobbin in order to provide free movability of the bobbin.

30. Regarding claims 55 and 68, Izuka et al disclose:

The magnetic circuit according to claim 46 (see claim 46), wherein the tracking coil generates a driving force in a tracking direction (column 22, lines 20-27), the first and second focusing/tilting coils generate a driving force in at least one of a focusing direction and a tilting direction including the focusing direction (column 22, lines 27-30).

31. Regarding claim 62, Izuka, in view of Suzuki, et al disclose:

The optical pickup actuator according to claim 54 (see claim 54), wherein the actuator is applied to CD-RM, DVD-ROM, and CD-DVD compatible optical pickups (Abstract).

32. Regarding claim 63, Izuka, in view of Suzuki, et al disclose:

The optical pickup actuator according to claim 54 (see claim 54), wherein the supports are wires or plate springs (column 13, lines 5-6).

33. Regarding claim 64, Izuka, in view of Suzuki, et al disclose:

The optical pickup actuator according to claim 54 (see claim 54), wherein the number of supports is four or six (figure 9, item 35).

34. Regarding claim 65, Izuka, in view of Suzuki, et al disclose:

The optical pickup actuator according to claim 54 (see claim 54), wherein the tracking coils and the first and second focusing/tilting coils are substantially rectangular in shape (figure 32, items 56, 57 and 58).

35. Claims 20, 21, 24 thru 28, 40, 41, 57, 58, 70 and 71 are rejected under 35 U.S.C.

103(a) as being unpatentable over Izuka, in view of Suzuki, in further view of Lee.

36. Regarding claims 20, 24, 26, 40, 57 and 70, Izuka et al disclose the magnetic circuit according to claim 17. Izuka fails to specifically disclose:

Wherein a position of a neutral zone between the first and third magnet parts and a position of a neutral zone between the second and fourth magnet parts, along the focusing direction, are changeable.

Lee et al disclose:

Wherein a position of a neutral zone between the first and third magnet parts (figure 3, item G) and a position of a neutral zone between the second and fourth magnet parts (figure 3, item G), along the focusing direction, are changeable (column 1, lines 64-67 and column 2, lines 1-5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to place changeable gaps between Izuka's magnets for the purpose of effecting the strength of the magnetic force in the tracking and focus directions.

37. Regarding claims 21, 25, 27, 41, 58 and 71, Izuka et al disclose the magnetic circuit of claim 20. Izuka fails to specifically disclose:

Wherein the position of the neutral zone between the first and third magnet parts and the position of the neutral zone between the second and fourth magnet parts along the focusing direction are changeable in order to optimize a tracking sensitivity.

Lee et al disclose:

Wherein the position of the neutral zone between the first and third magnet parts and the position of the neutral zone between the second and fourth magnet parts along the focusing direction are changeable (See claim 4) in order to optimize a tracking sensitivity (column 4, lines 7-21).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to place changeable gaps between Izuka's magnets for the purpose of affecting the sensitivity of the magnetic force in the tracking and focus directions.

38. Regarding claim 28, Izuka et al disclose:

The magnetic circuit according to claim 1, wherein the magnet includes a 4-polarization surface-polarized magnet or a pair of 2-polarization surface-polarized magnets (figure 32, 2 pair of oppositely polarized magnets).

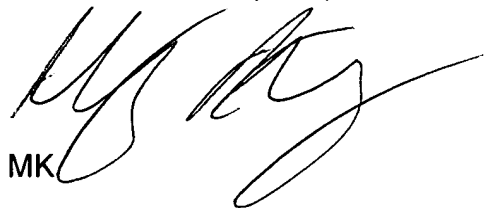
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew G. Kayrish whose telephone number is 571-272-4220. The examiner can normally be reached on 8am - 5pm M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on 571-272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


MK

9-15-2005


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